

REMARKS/ARGUMENTS

Claims 1-14 are amended. Claim 15 remains unchanged. Claims 16-17 are cancelled. Claim 18 is new. Support for the amendments can be found, for example, at paragraph 0051 (see the published version) of the specification. The presently amended claims 1-14 are now directed to a tire, not to a tire tread. The subject matter directed to a tire has been previously presented in claim 17 and supported in the originally filed specification (*see, e.g.,* paragraph 0009 of the published specification). No new matter is added. Entry of the above amendments is respectfully requested. Upon entry of the above amendments, claims 1-15 and 18 are pending. Reconsideration of the present application is respectfully solicited in view of the above amendments and the following remarks.

Claim Objections

Claim 12 is objected to due to a typographical error concerning the word “trimester”, which has now been corrected. Withdrawal of the objection is, therefore, respectfully requested.

Claims are allowable under 35 U.S.C. § 103(a)

I

Claims 1-14 and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sandstrom (US Patent Application Publication No. 2003/0089438) in view of Vasseur I (WO 02/088238). *See* pages 3 and 4 of the Office Action. Applicants respectfully traverse.

For convenience, Applicants will use the citations of Vasseur I from its English Language equivalent, US 2004/0127617, as does the Examiner.

Before addressing the Examiner’s rejection, Applicants would like to briefly describe the invention as presently claimed.

Claim 1 of the present application is directed to a tire comprising a tread.

The tread comprises a rubber composition, which comprises:

- a diene elastomer,
- a reinforcing inorganic filler in an amount of greater than 50 phr,
- a coupling agent, and
- a plasticising agent.

The diene elastomer comprises more than 30 phr of butyl rubber.

The plasticising agent comprises an unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol.

As explained at, e.g., paragraph 006 of the present published application, the grip of the tire as described in claim 1 on wet ground is significantly increased. This unexpected result is further demonstrated by the comparative test results described at paragraphs 0122-0140 of the present published application.

In the comparative tests, the control composition C-1 comprises two known SBR and BR diene elastomers, and is conventionally used in what are called "green" tires of low energy consumption. The composition according to the present invention C-2 comprises 50 phr of butyl rubber with which are associated 50 phr of an SBR of the same structure as C-1 (but devoid of aromatic oil), and also a glycerol fatty acid triester (sunflower oil having a high content of oleic acid). In these comparative examples, compositions C-1 and C-2 are used as treads of radial-carcass tires for passenger-vehicles, referred to respectively as P-1 (control tires) and P-2 (tires according to the invention). It was unexpectedly noted that under the same braking test conditions, the braking distance of the P-2 tires (i.e. according to the present invention) on wet road is reduced by 26% compared to the braking distance of the control tires P-1.

In rejecting the claims, the Examiner states that Sandstrom, which recites a tire tread made of a rubber composition, teaches every limitation of claim 1 of the present application except for the use of unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol as a plasticizing agent. According to the Examiner, Vasseur I, suggests the grip performance of the tire tread is conserved over time when unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol is used in the rubber composition of tire tread. *See* page 3, last paragraph of the Office Action. Therefore, the Examiner concludes that it would have been obvious to use unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol in Sandstrom's tire tread composition and arrive at the invention as described in claim 1 of the present application. Applicants respectfully disagree for reasons expressed below.

First, there is no apparent reason for a person of ordinary skill in the art to apply the teachings of Vasseur I to the tire composition of Sandstrom to arrive at the present invention. *See, KSR Int'l Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (2007).

Sandstrom is directed to "large pneumatic tires for various **agricultural vehicles**, such as for example tractors." *See* paragraph 0002 and Fig. 2. (Emphasis added.) At paragraphs 0003-0006, Sandstrom explains the following:

[0003] Such tire treads generally contain significantly raised lugs which are designed to be ground engaging.

[0004] **It can readily be seen that such tractor tires, with lugs designed to be ground engaging, present only small portion of the tread to the ground**, at least insofar as the surface of the lugs themselves are concerned as compared to typical passenger tire treads.

[0005] Accordingly, **such tractor tires rely more on the weight of the associated tractor to provide tire tread traction over the ground than passenger tires**.

[0006] Also, it can be readily visualized that shocks originating by the tire traveling **over irregularities of the ground** are readily transmitted to the wheel, and hence to the axle, of the associated vehicle and thereby to transmit the associated shock to the vehicle which, in turn, can result in a discomfort to the individual driving the vehicle.

(Emphasis added.)

It is apparent from the above description, Sandstrom is directed to agricultural vehicles, which are intended to run at a low speed on soft farm grounds. Nowhere does Sandstrom suggest or even imply that there is a need to increase the tire's ability to grip on wet ground. Indeed, a person of ordinary skill in the art would not consider the grip ability of Sandstrom's tires on wet ground, considering the irregularity of the ground, low travel speed, heavy weight of the vehicles, etc.

Vasseur I is directed to tires of a passenger vehicle, which is apparently designed for running on roads at a very high speed. *See* paragraph 002. There is a need to improve the grip of tires of a passenger vehicle on dry or damp ground. *See* paragraph 0005.

A person of ordinary skill in the art would not add unsaturated (C_{12} - C_{22}) fatty acid triester of glycerol to Sandstrom's tire tread composition, based on Vasseur I, which is directed to a light passenger vehicle running on roads at a high speed, to improve the grip of Sandstrom's tire, which is directed for a heavy agriculture vehicle running on loose and irregular ground at a low speed.

Second, even if a person of ordinary skill in the art were to add unsaturated (C_{12} - C_{22}) fatty acid triester of glycerol as taught in Vasseur I to Sandstrom's tire tread composition, as suggested by the Examiner, s/he would still not arrive at the present invention as described in claim 1. *See* MPEP 2143.03("All claim limitations must be taught or suggested.") As explained above, claim 1 recites, among other things, "a reinforcing inorganic filler in an amount of greater than 50 phr." According to the definition set forth in the specification, "reinforcing inorganic filler" is any inorganic or mineral filler, whatever its color and its origin (natural or synthetic), also referred to as "white" filler, "clear" filler or alternatively "non-black" filler, in contrast to a conventional tire-grade carbon black (for treads) in its reinforcement function. *See* paragraph

0044 of the present application (published version). All of the tire tread compositions illustrated in Sandstrom contain conventional carbon black in the absence of any inorganic filler as recited in claim 1 of the present application. *See* Tables I and III. Nowhere does Sandstrom teach any amount of an inorganic filler, not to mention the amount of an inorganic filler recited in claim 1. Therefore, even if a person of ordinary skill in the art would have added unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol as taught in Vasseur I to Sandstrom's tire tread composition, s/he would at best obtain a composition which is free of any amount of inorganic filler, in contrast to claim 1 of the present application.

Third, the unexpected results as shown at paragraphs 0122-0140 further indicate that the invention as described in claim 1 of the present application is not obvious over Sandstrom in view of Vasseur I. *See* MPEP 716.02(a) (III) ("Presence of an unexpected property is evidence of nonobviousness.")

Based on the foregoing, claim 1 is not obvious over Sandstrom in view of Vasseur I under 35 U.S.C. § 103 (a). For at least the same reasons, claims 2-14, each of which depends from claim 1, are also not obvious over Sandstrom in view of Vasseur I under 35 U.S.C. § 103(a). Withdrawal of the rejections of claims 1-14 is, therefore, respectfully requested.

II.

Claim 15 is rejected under 35 U.S.C. §103(a) as being unpatentable over Vasseur II (WO 03/066722) in view of Sandstrom and Vasseur I. For convenience, Applicants will use below the citations of Vasseur II's English counterpart US 2005/0043448, as does the Examiner.

According to the Examiner, Vasseur II teaches a process of preparing a tire tread, which satisfies every limitation of claim 15 except for the use of a diene elasomer comprising more

than 30 phr of butyl rubber, and the use of a plasticizing agent comprising an unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol. The Examiner then points out that Vasseur I discloses the use of a plasticizing agent comprising an unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol, and Sandstrom discloses the use of diene elastomer comprising more than 30 phr of butyl rubber. Therefore, the Examiner concludes that it would have been obvious for a person of ordinary skill in the art to include the step of using a diene elastomer comprising more than 30 phr of butyl rubber and the step of using a plasticizing agent comprising an unsaturated (C₁₂-C₂₂) fatty acid triester of glycerol in Vasseur II's process. Applicants respectfully disagree.

Like Vasseur I, Vasseur II is directed to vehicles, typically passenger cars, running on roads at a high speed. Vasseur II aims to provide a tire with a satisfactory road behavior and property of grip on wet, snow covered or icy ground. *See*, e.g., paragraphs 003-0013 and 0197. On the other hand, Sandstrom, as noted above, is directed to heavy agriculture vehicles running on irregular farm land at a low speed. Sandstrom aims to increase the absorbency of the tire and provide comfort for the vehicle operator. Sandstrom and Vasseur II are directed to different types of vehicles for different uses and with different requirements. Without any specific teaching, a person of ordinary skill in the art would not look at Sandstrom and include a step involved in Sandstrom in the process of Vasseur II, e.g., using a diene elastomer comprising more than 30 phr of butyl rubber, as proposed by the Examiner. For at least this reason, claim 15 is not obvious under 35 U.S.C. § 103(a) over Vasseur II in view of Sandstrom and Vasseur I.

Furthermore, the unexpected results of the tire made in accordance with the process of the present invention, as shown at paragraphs 0122-0140, also indicate that claim 15 is patentable under 35 U.S.C. § 103(a) over Vasseur II in view of Sandstrom and Vasseur I.

Withdrawal of the rejection of claim 15, is therefore, respectfully requested. Claim 18 is allowable along with claim 15 on which it depends.

Based on the foregoing, Applicants believe that the present application is in condition for allowance. Early and favorable consideration is earnestly requested.

It is believed that no other fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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